REMARKS

Objections

The Office correctly noted that claim 2 contained a typographical error for "modem/demodulation." The Office also noted that the dependent claims 14-17 had improper dependencies. The Applicant thanks the Office for noting these issues which have been corrected herein.

Claims Rejections - 35 USC §102(b)

The Office rejected claims 1-3, 5, 6, and 9-11 under 35 U.S.C. 102(b) as being anticipated by Aukland (US Patent App. Pub. No. 2002/0183013), which was cited by the Applicant. A rejection based on anticipation requires that a single reference teach every element of the claim (MPEP § 2131). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Or stated in another way, a "claim is anticipated only if each and every element as set forth in the claim is found, . . . described in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The Office alleges that Auckland describes "a self-booting software defined radio (SDR) module that interfaces with a host system." This Applicant respectfully submits that this is not an accurate interpretation of Auckland.

There is nothing in Auckland that describes or infers anything akin to self-booting as depicted in the present application. The invention of Auckland relates to a programmable radio frequency (RF) sub-system and wireless communications device, and in particular to using the integrated antenna/filter sub-system. There is a control circuit coupled to the antenna to provide the control signals. While there are certain elements that are programmable, it is distinguishable from a self-booting SDR.

The Office further alleges that Auckland [par 0143] details "a modulation/demodulation section with a stored run-time kernal, wherein a processing unit of said modulation/demodulation section executes said run-time kernal." The control circuit 1716 in Auckland is precisely that – a control circuit that that performs the functions for radiotelephone operations, wherein the control circuit is coupled to memory 1718 to support the applications of the control circuit 1716. This paragraph [0143] actually states the following:

> [0143] The control circuit 1716 controls operation of the radiotelephone 1704. The control circuit 1716 may be implemented as a digital signal processor, microprocessor, microcontroller or as discrete logic implementing the necessary functions to control the radiotelephone 1704. The memory 1718 stores data and instructions for use by the control circuit 1716. For example, the memory may store information about channel frequency assignments, etc., for use by the software programmable radiotelephone 1704. In response to information about an active air interface standard, the control circuit 1716 accesses this data in the memory 1718 and uses the data to control the transmit circuit 1712, the receive circuit 1710, the synthesizer 1714 and the antenna control unit 1722. Other components of the radio may access data in the memory over a system bus or other communication means."

A further description of the control circuit is provided in Auckland Figure 6:

> [0090] The controller 614 controls operation of the RF portion 600. In the illustrated embodiment, the controller 614 is embodied as a digital signal processor (DSP) and operates in conjunction with data and instructions stored in memory. The memory may be integrated with the DSP or may be packaged separately. In other embodiments, the controller 614 may be embodied as a general purpose processor such as a microprocessor or microcontroller. In still other embodiments, the functionality of the controller 614 may be partitioned among many devices and software routines of the radio including the RF portion 600.
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> [0091] In the preferred embodiment, the controller 614 controls other operations of the radio which includes the RF portion 600. For example, the functions of the controller 614 may be provided by the call processor of a radiotelephone handset, which is also responsible for timing operations and controlling the user interface of the radiotelephone. In some embodiments, however, the controller 614 may be dedicated to controlling the RF front end of the radio, including functions such as modulation, demodulation, encoding and decoding. In a software definable radio, where the radio hardware is fixed but may be customized by on-board software during operation to allow the radio to operate in conjunction with a particular air interface standard or on a particular frequency band, the customization operation may be controlled by the controller 614.

In distinction, claim 1 recites a run-time kernal as part of the modulation/demodulation section. The run-time kernal in claim 1 (as amended) is an SCA run-time kernal which contains sufficient resources to function for SCA.

With respect to claim 5, the Office alleges that the "it is inherent that the control circuit would comprise a high speed fabric to couple the processing circuitry and memory." The Applicant respectfully disagrees and specifically notes that it is not inherent to employ a high speed fabric for such operations in the field of Auckland. A high speed fabric is not recited or described in any fashion in Auckland and rather, Auckland details the bus communications, such as serial or parallel (see Auckland Par [0086]). The present application contains detailed descriptions of the claimed high speed fabric and the manner of operation such as in Par [0056-0057], which notes the high speed fabric used to couple the elements of the modulation/demodulation section as depicted as label 125 in Applicant's Figure 2. The Office has not satisfied its burden of an anticipation rejection as Auckland does not teach a high speed fabric, therefore the rejection is traversed.

Furthermore, Applicant has amended Claim 1 to incorporate a plug-and-play interface mechanism which was noted by the office as lacking in Auckland.

For at least the reasons presented herein, Applicant believes that the anticipation rejections have been traversed and requests prompt reconsideration and allowance.

Claim Rejections – 35 USC § 103

The Office has quoted the statute from 35 USC 103(a), which is referenced herein. The Office has rejected claims 4, 7, and 12 – 20 as being unpatentable over Auckland. Applicant has carefully considered the Office rejections and respectfully submits that the amended claims, as supported by the arguments herein, are distinguishable from the cited reference.

According to the MPEP §2143.01, "[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some

teaching, suggestion, or motivation to do so found in either the references themselves or in the knowledge generally available to one of ordinary skill in the art."

A useful presentation for the proper standard for determining obviousness under 35 USC §103(a) can be illustrated as follows:

1. Determining the scope and contents of the prior art;
2. Ascertaining the differences between the prior art and the claims at issue;
3. Resolving the level of ordinary skill in the pertinent art; and
4. Considering objective evidence present in the application indicating obviousness or unobviousness.

Obviousness cannot be established by combining prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. The mere fact that the prior art may be modified in the manner suggested by an examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. The Board of Patent Appeals and Interferences (BPAI) continues to reverse Examiners that can not explain "why a person of ordinary skill in the art would have found it obvious" to combine the references in the manner proposed by the Examiner."

Further, "…[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *See Lee*, 277 F.3d at 1343-46; *Rouffett*, 149 F.3d at 1355-59." *In re Kahn* (Fed. Cir. 2006,).

"….[T]o establish a prima facie case of obviousness based on a combination of elements disclosed in the prior art, the Board must articulate the basis on which it concludes that it would have been obvious to make the claimed invention. [*Rouffett*, 149 F.3d at 1355] In practice, this requires that the Board "explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious." Id. at 1357-59. This entails consideration of both the "scope and content of the prior art" and "level of ordinary skill in the pertinent art" aspects of the Graham test. When the Board does not explain the motivation, or the suggestion or teaching, that would have led the skilled artisan at

the time of the invention to the claimed combination as a whole, we infer that the Board used *hindsight* to conclude that the invention was obvious." *In re Kahn* (Fed. Cir. 2006, 04–1616).

The Office rejected claim 4, 13, 15, and 17-20 under 35 U.S.C. §103(a) as being unpatentable over Auckland. In doing so, the Examiner correctly states that the cited reference fails to disclose a multi-port crossbar. To correct this deficiency, the Examiner takes official notice that it would have been obvious to one of ordinary skill to modify the cited reference to include a multi-port cross bar on the 'front end of the Auckland radio.'

As noted herein, multi-port cross bars are known in the art – however the implementation of a multi-port cross bar into an RF front end as detailed in the present application is not know in the art and not detailed in Auckland.

If it were obvious, then it should be easy to find a reference that suggests modifying the cited references to include a multi-port crossbar as recited in claim 4, 13, 15, and 17-20. Examiner is kindly reminded that "assertions of technical fact in areas of esoteric technology must always be supported by citation of some reference work" and "allegations concerning specific knowledge of the prior art, which might be peculiar to a particular art should also be supported." MPEP § 2144.03. The Applicant notes that a reference that fails to disclose any description of a crossbar switch or how it could be implemented is not sufficient to establish a prima facie case of obviousness. Rather, the reference or references must disclose or suggest a multi-port cross bar switch as defined by the Applicant's claims.

In addition, the use of internal switch fabrics as detailed in the present application is used to route data internally and to interface to external resources. While certain state of the art employs chips and FPGAs with various buses to interconnect components, the present claims replace certain buses with the switched internal fabric. Such a contention free pathway is a notable improvement according to the described embodiment. Claim 18 has been amended to clarify the internal switched fabric and the Applicant believes that this features traverses the rejection of Claim 18 and dependents therefrom. The use of the internal fabric is shown in one

embodiment in Applicant's Figure 2 and noted as label 125. Applicant's Figure 8b provides a further description of such an internal fabric.

Regarding claims 7 and 8, the Office rejects these claims and alleges that Auckland discloses that reconfiguration information can be communicated by wireline connection. There is no definition or illumination as to the term "wireline" in Auckland, thus it is unclear what was intended. However, the relevant paragraphs from Auckland include:

[0149] At block 1802, an air interface standard is identified for wireless communication. If the radio is currently in radio communication, the AIS may be identified by receiving radio signals defining the AIS. For example, the remote radio or base station with which the radio currently communicates may send control transmissions including data identifying a new AIS or new characteristics of an AIS for use by the radio. In one example, a base station may instruct the radio to move to a different frequency band, specifying the new frequencies for communication and timing information for synchronization using the same type of modulation and multiple access. In another example, the base station may specify a completely different air interface standard than is currently in use, such as a switch from CDMA at 800 MHz to GSM at 1900 MHz.

[0150] In other embodiments, **identification of the air interface standard may be achieved by manual entry or wireline entry of this information**. Alternatively, the identification may be made by some automatic procedure such as lapse of a timer or satisfaction of some logical query. In alternative embodiments, the identification process may be omitted if the AIS is previously known. (emphasis added)

Thus wireline in Auckland refers to control communications of the air interface standard. This is distinguished from the plug-and-play interface mechanisms as claimed in claims 1 and 7. As noted in the present application, the device, such as a PCMCIA is coupled to the plug-and-play interface mechanism which couples to a host system having plug-and-play capability and the device self-boots and configures itself as an SDR. Plug-and-play is not disclosed by Auckland and there is nothing to suggest that Auckland contemplated plug-and-play operations. Claims 1 and 13 have been amended to incorporate the plug-and-play feature and should be deemed allowable as we as dependents therefrom.

As stated, the claims have been amended and should be allowable however Applicant reserves the right to enter additional arguments and supporting materials if all presented claims are not allowed.

Telephone Interview

Present Office policy places great emphasis on telephone interviews initiated by the examiner. For this reason, it is not necessary for an attorney to request a telephone interview. Examiners are not required to note or acknowledge requests for telephone calls or state reasons why such proposed telephone interviews would not be considered effective to advance prosecution. The Applicant respectfully requests a telephone interview and feels the call will be beneficial to advance prosecution of the application. MPEP§408

Applicant believes the above amendments and remarks to be fully responsive to the Office Action, thereby placing this application in condition for allowance. No new matter is added. Applicant requests speedy reconsideration, and further requests that Examiner contact its attorney by telephone, facsimile, or email for quickest resolution, if there are any remaining issues.

Respectfully submitted,

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